

# ON Semiconductor

## Is Now

# onsemi™

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# NSR0140P2T5G

## Schottky Barrier Diode

These Schottky barrier diodes are designed for high-speed switching applications, circuit protection, and voltage clamping. Extremely low forward voltage reduces conduction loss. Miniature surface mount package is excellent for hand-held and portable applications where space is limited.

### Features

- Extremely Fast Switching Speed
- Extremely Low Forward Voltage – 0.28 V (Typ) @  $I_F = 1.0$  mA
- Low Reverse Current
- Lead-Free Plating
- This is a Pb-Free Device

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	$V_{RM}$	40	V
Continuous Reverse Voltage (DC)	$V_R$	30	V
Continuous Forward Current (DC)	$I_F$	70	mA
Non-Repetitive Peak Forward Surge Current	$I_{FSM}$	500	mA
ESD Rating: Class 1C per Human Body Model Class A per Machine Model			

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, (Note 1) $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	100 1.0	mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	1000	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 to +125	$^\circ\text{C}$

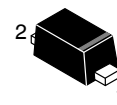
1. FR-5 Minimum Pad.



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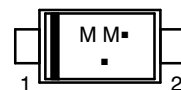
<http://onsemi.com>

## 40 V SCHOTTKY BARRIER DIODE



SOD-923  
CASE 514AA  
PLASTIC

### MARKING DIAGRAM



M = Specific Device Code\*  
(Character is rotated  $270^\circ$  clockwise)  
M = Month Code  
▪ = Pb-Free Package  
(Note: Microdot may be in either location)

### ORDERING INFORMATION

Device	Package	Shipping†
NSR0140P2T5G	SOD-923 (Pb-Free)	8000/Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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## ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage (I <sub>R</sub> = 10 μA)	V <sub>(BR)R</sub>	30	-	-	V
Total Capacitance (V <sub>R</sub> = 1.0 V, f = 1.0 MHz)	C <sub>T</sub>	-	2.0	2.5	pF
Reverse Leakage (V <sub>R</sub> = 30 V)	I <sub>R</sub>	-	300	500	nA
Forward Voltage (I <sub>F</sub> = 1.0 mA)	V <sub>F</sub>	-	0.28	0.35	V

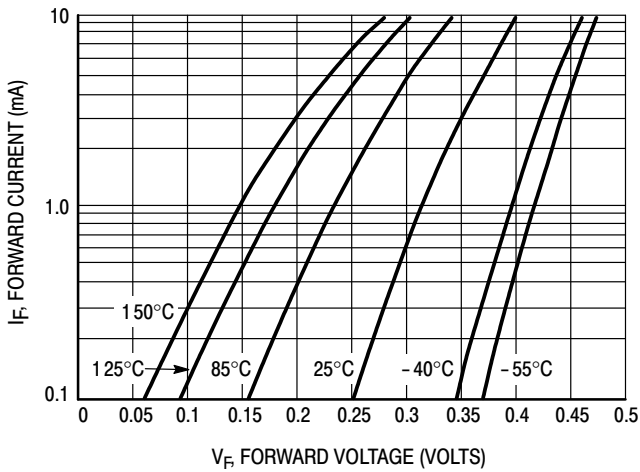


Figure 1. Typical Forward Voltage

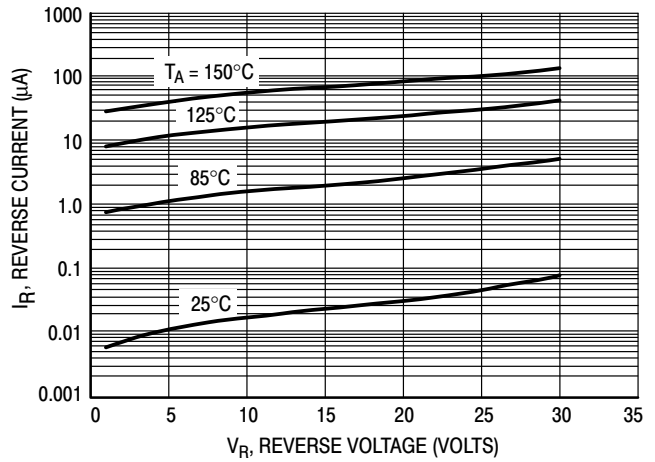


Figure 2. Reverse Current versus Reverse Voltage

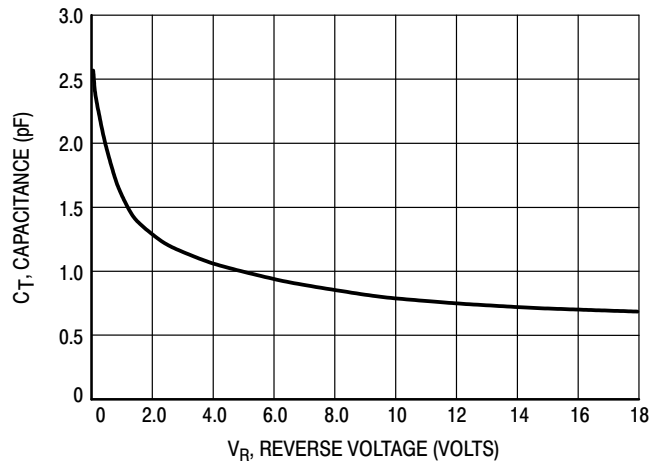
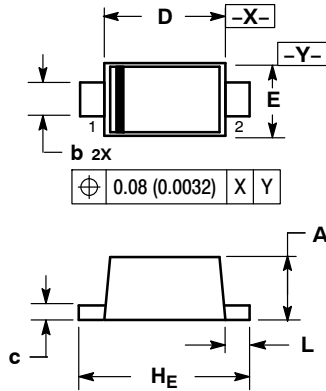


Figure 3. Typical Capacitance

# NSR0140P2T5G

## PACKAGE DIMENSIONS

SOD-923  
CASE 514AA-01  
ISSUE D

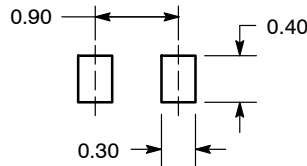


NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.34	0.39	0.43	0.013	0.015	0.017
b	0.15	0.20	0.25	0.006	0.008	0.010
c	0.07	0.12	0.17	0.003	0.005	0.007
D	0.75	0.80	0.85	0.030	0.031	0.033
E	0.55	0.60	0.65	0.022	0.024	0.026
H <sub>E</sub>	0.95	1.00	1.05	0.037	0.039	0.041
L	0.05	0.10	0.15	0.002	0.004	0.006

### SOLDERING FOOTPRINT\*



DIMENSIONS: MILLIMETERS

\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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